

ABSTRACT

A data encoder for encoding a codeword having a plurality of symbols for transmission through a data channel comprises a turbo encoder which has an interleaver, first and second RSC encoders, a puncturer and a mapper. The interleaver receives the codeword and provides an interleaved codeword. The first RSC encoder is for receiving the codeword and providing first parity bits in accordance with the codeword. The second RSC encoder is for receiving the interleaved codeword from the interleaver and providing second parity bits in accordance with the interleaved codeword. The puncturer is for receiving the codeword, the first parity bits and the second parity bits, and for puncturing at least the first and second parity bits in accordance with a pattern of a desired code rate. The mapper is for receiving the punctured parity bits, and for providing signal sets in accordance with the desired code rate.